



Chesterfield County Office of Water Quality



What is this **Orange Slime** in my creek?

Enviro Fast-Facts No. 1 - Iron Bacteria

If you have noticed a reddish-brown slime in your local creek or drainage way, don't be alarmed. Most likely it is just iron bacteria. Iron bacteria are a diverse group of microorganisms widely distributed in nature. They are found in fresh and salt waters, in soils and on desert rock surfaces. Iron bacteria thrive in mineral-rich soils, such as the ones present throughout Chesterfield County, and depend upon the iron, and to a lesser extent manganese, in the environment for their development.



To fulfill their energy requirements, iron bacteria oxidize dissolved iron in the water, changing it from its ferrous (Fe^{2+}) to ferric (Fe^{3+}) state. In the process, the iron becomes insoluble in the water and is precipitated as ferric hydroxide ($\text{Fe}(\text{OH})_3$), producing a reddish-brown slimy-looking deposit. These deposits can sometimes cover the entire bottom of a creek. Often, the bacteria also appear as an oily sheen on the water surface. If the oily sheen breaks apart when disturbed, it is probably iron bacteria.

Iron bacteria are harmless and do not cause diseases to humans or animals. They pose no health threat. However, the reddish-brown deposit can stain clothing and may be associated with an unpleasant odor. The deposits can be observed year-round, but are more commonly seen during spring and fall.

For more information about iron bacteria, please contact Weedon Cloe of the Chesterfield County Office of Water Quality at 706-2061.